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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,367	07/27/2001	Mark Childers	364B	7622

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EXAMINER

BRITT, CYNTHIA H

ART UNIT	PAPER NUMBER
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2133

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DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,367

Applicant(s)

CHILDERS ET AL.

Examiner

Cynthia Britt

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

Page 1 line 11 "It is well known than signals..."

Page 1 line 22 "this is achieved be adjusting..."

There are many such typographical or spelling errors such as listed above. All are not listed in this action. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 9-12, and 17-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The method of claim 17 the indicator value does not appear to concur with the specification on page 18. The wording of the definition lines 23-24 would indicate that in order to be consistent the "and" in line 25 of page 18 would need to be an "or" as well as line 4 of claim 17. The receiver of claim 9, the indicator value does not appear to concur with the specification on page 18. The wording of the definition lines 23-24 would indicate that in order to be consistent the "and" in line 25 of page 18 would need to be an "or" as well as line 3 of claim 9.

Claims 10-12 are dependent on claim 9 and thus inherit the 35 U.S.C. 112, first paragraph issues of the independent claim 9. As such these claims have not been further examined on their merits.

Claims 18-24 are dependent on claim 17 and thus inherit the 35 U.S.C. 112, first paragraph issues of the independent claim 17. As such these claims have not been further examined on their merits.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11, 12, and 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The above claims cite terms such as "total count", "second threshold" and "third threshold" which are not clearly defined or explained in the claims. For the purpose of examination the examiner will interpret these to be a variable in an equation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 1-8, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sobiski et al. U.S. Patent No. 6,487,352 in view of Barnard et al. U.S. Patent No. 6,115,157.

As per claims 1-3, 7, and 13 Sobiski et al. substantially teach the claimed method and optical device for detecting chromatic dispersion in an optical system is disclosed. The optical device includes a receiver, which converts an optical signal into an electrical signal having a plurality of frequency components. A bandpass section separates the plurality of frequency components of the electrical signal. Each of the frequency components has a corresponding voltage level. The optical device also includes a gain section which amplifies each of the corresponding voltage levels of the plurality of

frequency components, wherein the device outputs a measure of chromatic dispersion in the optical signal based on a comparison of a power level of each of the frequency components to that of an ideal optical signal with no chromatic dispersion. The apparatus includes a detector, which converts at least a portion of the optical signal into an electrical signal having a plurality of frequency components; a controller, which receives an output from the detector, wherein the detector outputs a measure of the chromatic dispersion present in the optical signal based on a comparison of a power level of each of said frequency components to that of an ideal optical signal with no chromatic dispersion; and a dispersion compensator, which introduces corrective chromatic dispersion based on input from the controller (column 2 line 51 through column 3 line 22). Not explicitly disclosed is the error detection and correction circuit. However, in an analogous art, Bernard et al. teach an optical receiver generally comprises an optical-to-electrical converter. A data regenerator and clock recovery block extracts the information from the converted signal, based on a threshold level. The threshold is selected such as to provide the best error rate for a predetermined signal power level. For example, the levels over $V_{sub.Th}$ are interpreted by the receiver as logic "1"s, while those under, as logic "0"s. The errors in regenerated data $D_{sub.1}$, namely the BER value, are counted using an error detector. It is known to generate a control code at the transmission site that is then transmitted with the information along the communication link. Error detection is based in general on comparison between the transmitted and the received control code. The error detection in SONET/SDH determines the BER of the respective signal based on the information in

the B1 and B2 fields of the transport overhead of the SONET/SDH frame, as well as field B3 of the path overhead for the respective section, line and path. The threshold level $V_{sub.Th}$ applied to data regenerator may be adjusted with a controller, so as to obtain BER values under a provisioned value of the respective system. The error count and control data are input to a performance monitor, connected to some or all remote elements of the network over a bus. (Figure 2A, column 4 line 62 through column 5 line 23) therefore it would have been obvious to a person having ordinary skill in the art at the time this invention was made to have used the error system of Bernard et al with the optical device of Sobiski et al. This would have been obvious as suggested by Bernard et al. in order to increase performance rates (column 2 lines 51-58).

As per claims 4-8, and 14-16, Sobiski et al. teach that a portion of the signal out is branched-off via a conventional optical tap and input to a detector. The detector converts the branched off portion of the optical signal into an electrical signal, which is then processed. The electrical signal is output from the detector and is input to a controller. The controller includes at least one analog-to-digital-converter (A/D converter) and microprocessor, for example a digital signal processor (DSP).

The output signal of the detector may have missing frequency components as a result of chromatic dispersion. In particular, these frequency components may have been reduced in amplitude or lost completely due to chromatic dispersion. The controller determines which frequency components are reduced in magnitude or missing from the optical signal, and reintroduces these frequency components via the controller command into the dispersion compensator. As such, the detector detects the degree of

chromatic dispersion in the electrical domain, and the controller compensates for this degree of dispersion by "reintroducing" the Fourier frequency components (again in the electrical domain), which have been lost or which have reduced amplitude due to chromatic dispersion. The dispersion compensator then re-introduces the missing or reduced components (in the optical domain) into the signal out based on the input from the controller, and thereby corrects for chromatic dispersion. (column 4 lines 8-59 figure 4)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,307,899

Starr et al.

This patent teaches a bit error rate monitor that determines the bit error rate (BER) of the transmission system. The BER is determined through the use of a cyclic redundancy check (CRC) in the encoded symbols. A CRC enables a bit error rate monitor to determine when errors in the decoded symbols occur. By monitoring the errors identified through the use of the CRC over a period of time, the BER of the system can be determined. Any suitable method of determining BER can be adapted for use in this system. The BER monitor generates a control signal that varies as a function of the measured BER. The control signal can take many forms. The control signal can be based in-whole or in-part on the BER. The control signal can be analog or digital and linear or non-linear as known by those skilled in the art. Alternatively, the control signal can be binary such that the control signal produced is greater than or less than a

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threshold value. The BER monitor preferably determines the BER and generates a control signal continuously. Alternatively, the BER monitor can determine the BER and generate a control signal in a sampled fashion on a random or non-random basis. The means for adjusting the coding gain of the system receives the control signal generated by the BER monitor, calculates a corresponding SNR and optimizes the coding gain of the system in response to the control signal. The claims recite features such as *"means responsive to the decoder, for generating a control signal that varies as a function of a bit error rate of the system"*, *" means responsive to the decoder, for generating a control signal that varies as a function of a bit error rate of the system"*

U.S. Patent No. 5,325,397

Scholz et al.

This patent teaches a method of assessing a link for a digital communication system and providing a value for a channel or link state parameter, particularly bit error rate, and apparatus for the same, in which an estimate of the probability density function for the channel or link is obtained by categorizing decision variables into threshold categories, and comparing the estimated probability density function with stored known probability density functions with each stored probability density function the value of the channel parameter being monitored is stored. The value of the channel parameter being monitored is determined by selecting the value associated with the stored probability density function closest resembling the estimated probability density.

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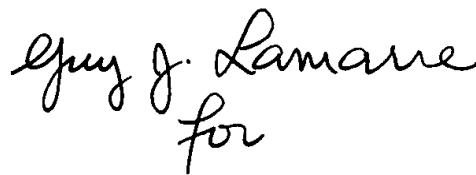
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Britt whose telephone number is 703-308-2391. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cynthia Britt
Examiner
Art Unit 2133



for

Albert DeCady
Primary Examiner